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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,148	09/08/2004	Kazuhiko Honda	34833/US-465122-00004	8978

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EXAMINER

LAVILLA, MICHAEL E

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/507,148

Applicant(s)

HONDA ET AL.

Examiner

Michael La Villa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-12 and 15-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-12 and 15-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 22 is objected to because of the following informalities: The claim status identifier of Claim 22 is incorrect. Appropriate correction is required.

Specification

2. The Substitute Specification, filed on 8 September 2004, has been entered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:
4. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. Claim 26 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding Claim 26, while the Specification refers to intermetallic at abutting positions to Al phase or in Al phase, this language is understood to mean that any given portion of the layer that comprises aluminum intermetallic is either in Al phase or abutting Al phase. The language is not understood to mean, as presently claimed, that all intermetallic in the plating layer may be in an abutting arrangement. Therefore, it is unclear how applicant derives antecedent support for the invention as now

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claimed. Applicant's remarks do not provide a specific rationale for antecedent support.

6. Claim 26 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Regarding Claim 26, it is unclear where applicant teaches how to form a plating layer with aluminum intermetallic compound limited to abutting Al phase, as opposed to also in Al phase. While the Specification at paragraphs 25-29 refers to intermetallic at abutting positions to Al phase, it is unclear where the Specification teaches disposition of intermetallic exclusively at abutting positions. Moreover, applicant has provided no guidance as to how one of ordinary skill in the art would fabricate a plating layer where there were exclusively abutting arrangements.
7. The following is a quotation of the second paragraph of 35 U.S.C. 112:
8. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
9. Claims 10-12 and 15-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
10. Regarding Claims 10, 15, 17, 18, 23, 25, and 26, it is unclear what is meant by the phrase "-type intermetallic compound." Is the word "type" superfluous? If not, it is unclear how it further limits the scope of claim coverage.

11. Regarding Claims 10, 18, and 26, it is unclear what is meant by the phrase "Al phase." Does paragraph 23 of the Specification define this phrase for the purpose of the claims? Does the phrase mean "an Al solid solution that contains Zn in the state of a solid solution"? If not, what does it mean? Is it any aluminum containing material? Is it any Al solid solution that contains other materials in the state of a solid solution?

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims 10, 15, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedersdorf et al. WO 01/27343. Friedersdorf teaches plating steel with aluminum/zinc plating material that may comprise aluminides, including TiAl₃ and iron aluminides. See Friedersdorf et al. (page 4, final paragraph; page

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5, bottom paragraph through first full paragraph; page 8, bottom paragraph through page 10, first full paragraph; page 12, first two paragraphs; Claims 1, 2, 8, 9, 14, 15). Friedersdorf does not exemplify including TiAl_3 , but suggests that effective platings may comprise TiAl_3 in the claimed amounts. It would have been obvious to one of ordinary skill in the art at the time of the invention to include TiAl_3 in the plating of Friedersdorf in the claimed amounts, as Friedersdorf suggests that effective platings may be formed in this manner. It would be expected that the claimed Al phase would be present as Friedersdorf teaches a plating mainly comprised of aluminum with a balance of zinc. It would be expected that the claimed melting points and lattice constants would be inherently satisfied, as applicant's Specification teaches that TiAl_3 meets these requirements.

Response to Amendment

15. In view of applicant's amendments and arguments, applicant traverses the section 102 rejection over Honda of the Office Action mailed on 26 September 2005. Rejection is withdrawn.

Allowable Subject Matter

16. Claims 11, 12, and 19-24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
17. Claim 18 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

18. The reviewed prior art does not teach or suggest the subject matter of Claims 11, 12, and 18-24. With respect to Claims 11 and 12, there is no teaching or suggestion of plating layer having the claimed compositions in combination with the other claimed limitations. With respect to Claims 18 et seq., there is no teaching or suggestion of a plating layer having the claimed abutting arrangement of aluminum intermetallic and Al phase in combination with the other claimed limitations.

Conclusion


19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is (571) 272-1539. The examiner can normally be reached on Monday through Friday.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael La Villa
14 March 2006



MICHAEL E. LAVILLA PH.D.
PRIMARY EXAMINER